On local classification of singular symplectic forms.

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Let ω be a closed 2-form on R^{2n}, ω is called the singular form if $\omega^n = f\Omega$, where Ω is the volume form and f is a smooth function $f : R^{2n} \to R$ such that $\Sigma_2 = f^{-1}(0) \neq \emptyset$. In [3], [5] and [2] it was shown that there are five generic types of singularities for germs of 2-forms on R^4. All these generic types, among which, one is unstable and has moduli parameters, are determined by the geometry of the pullback $i^*\omega$ to the hypersurface of degeneration $i : \Sigma_2 \to R^4$.

If germs of singular symplectic forms are equivalent then their pullbacks to the hypersurfaces of degeneration are equivalent. We consider the following problem :

Does the pullback of the singular symplectic form to its hypersurface of degeneration determine the equivalence class of the form?

References

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